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THE BIOLOGY OF NEARCTIC LEPIDOPTERA. II. FOODPLANT AND PUPA OF HEMIARGUS ISOLUS

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In early July 1943, about 10 mi. S. of Abilene, Taylor Co., Texas, I discovered a lycaenid larva feeding on a large pod of mesquite, Prosopis juliflora (Swartz) DC. It was confined and fed, and on 18 July it pupated. The imago emerged on 25 July and proved to be Hemiargus (Echinargus) isolus (Reak.). This was of considerable interest, since the life-history and foodplants of this very common Blue were wholly unknown. During August and September H. isolus was abundant in Prosopis groves, but no more larvae were found. While Prosopis may be the primary foodplant in the Southwest wherever it occurs, it obviously is not the only plant; H. isolus ranges far beyond the limits of *Prosopis* in the West and even appears to have endemic colonies east of the Mississippi (Remington, 1942). Other species of Hemiargus have been recorded feeding on Prosopis, Mimosa, Macroptilium, Chamaecrista, Abrus, Pithecolobium, Guilandina, Astragalus, and Medicago. The foodplant record for H. isolus in Klots' new book (1951, p. 159) is based on a verbal communication from the writer.

This being the first record of early stages of *H. isolus*, a brief description, prepared from the pupal shell, is given as follows: length 6.2 mm.; length of dorsum of abdomen (ignoring curvature) 4.0 mm.; width of abdomen just caudad of wing cases 1.9 mm.; length of maxillary sheath 2.2. mm. (extending 1.0 mm. beyond tip of sheath of prothoracic legs and 0.3 mm. beyond sheath of mesothoracic legs and exceeded by wing cases and antennae by 4.0 mm.); hairs very sparse, especially on dorsum, but of highly distinctive shape — columnar and very rough in outline, not

strongly capitate, never slender or smooth, rarely spiculately branched; longest hairs less than 0.15 mm. long; spiracles of abdominal segments II and III very far laterad, touching margin of tergal plates, sparsely surrounded by hairs and by papillae, the latter most numerous caudad of spiracle; three well-separated groups of hooklets near end of abdomen ventrally: — a median ventro-caudal clump of about 30 hooklets on extreme end of last dorsal plate (terga IX-X?) and a pair of ventro-lateral clumps of about 23 hooklets each, on anterior edge of last ventral plate (sterna VIII-X?).

The combination of characters given above distinguishes the pupa of H. isolus from all Lycaenidae known to me. The pupa was held firmly to its substratum by a strong girdle.

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